CLAIMS

1. A process for producing a flat product made of a zirconium alloy having a Kearns factor FT of between 0.30 and 0.70, characterized in that:

- an ingot of zirconium alloy with the following composition, in percentages by weight, is smelted:

Nb = 0.5 to 3.5%
Sn = 0 to 1.5%
Fe = 0 to 0.5%
Cr + V = 0 to 0.3%
S = 0 to 100 ppm
O = 0 to 2000 ppm
Si = 0 to 150 ppm,

the balance being zirconium and impurities resulting from the smelting;

- said ingot is formed;

- said formed ingot undergoes one or more hot-rolling passes in order to obtain a flat product, the final of said hot-rolling passes being carried out between 810 - 20Nb% and 1100°C and not being followed by any quenching operation;

- optionally, said flat product undergoes an annealing operation at a temperature not exceeding 800°C; and

- the flat product undergoes one or more cold-rolling/annealing cycles, said annealing operations not taking place above 800°C.

2. The process as claimed in claim 1, characterized in that the Nb content of the alloy is from 0.5 to 1.5%.

3. The process as claimed in either of claims 1 and 2, characterized in that the final of said hot-rolling passes is carried out between 820 - 20Nb% and 1100°C.

4. The process as claimed in one of claims 1 to 3,

characterized in that said final hot-rolling pass is carried out at a temperature within ± 130°C of the temperature at which the alloy undergoes the $\alpha + \beta \rightarrow \beta$ transition.

5. The process as claimed in claim 4, characterized in that said final hot-rolling pass is carried out between 900 and 1030°C.

6. A flat product made of a zirconium alloy having a Kearns factor FT of between 0.30 and 0.70, characterized in that it is obtained by the process as claimed in one of claims 1 to 5.

7. A spacer grid for retaining the fuel rods in a light-water nuclear power plant reactor, characterized in that it is obtained by the forming of a flat product as claimed in claim 6.